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A new non-coastal record for the Pine Woods Littersnake, *Rhadinaea flavilata* Cope, 1871 (Squamata: Colubridae), in Russell County, Alabama, USA

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Abstract: We found a single specimen of *Rhadinaea flavilata* in Russell County, Alabama, in an area composed of primarily pine plantation habitat. This record is 200 km north of the currently recognized range of this species in Alabama and may represent an undiscovered population separated from the typical coastal plain range of this species.

Key words: Piedmont; coastal plain; Southeastern United States; snakes

Rhadinaea is a genus of semi-fossorial colubrid snakes with 21 currently recognized species (Wallach et al. 2014) occupying primarily pine-oak woodlands and cloud forests in montane and lowland Mexico and northern Central America (Myers 1974). The Pine Woods Littersnake, *Rhadinaea flavilata* Cope, 1871, is the northernmost distributed species of the genus, endemic to the Southeastern United States and found patchily from eastern Louisiana along the coastal plain to North Carolina (Myers 1967). It typically is encountered under logs, leaves and other cover in coastal pine woods with poorly draining soils (Ernst and Ernst 2003). Most known populations, with the notable exception of one near Aikman, South Carolina (Whiteman et al. 1995), are found on the coastal plain within 120 km of the coast, and at less than 30 m above sea level (Ernst and Ernst 2003).

While conducting fieldwork on the edge of the piedmont in the southeastern United States on 8 June 2013 at 00:28, ADM and AF encountered a single specimen of *Rhadinaea flavilata* on Highway 26 west of Uchee Road near Hatchechubbee, Russell County, Alabama, at an elevation of ~108 m (32.26892, –085.31737, WGS84). When found, the snake was alive and moving, but was likely struck by a vehicle as it visibly was injured and making quick, uncoordinated movements. The snake perished shortly thereafter, and we collected a tissue sample and retained the body as a voucher specimen under the field series number ADM 972. We deposited a photo voucher (Figure 1) at the Florida Museum of Natural History, which received catalogue number 177646, and the body and tissue at the American Museum of Natural History, AMNH R177659. Work was conducted under IACUC #15-01-01 from College of Staten Island and scientific collecting permit 6975: 2013000082768680 issued to ADM from the Alabama Department of Conservation and Natural

Figure 1. *Rhadinaea flavilata* found in Russell County, Alabama.

Table 1. Habitat within a 2 km buffer zone of the occurrence record. Coverage is calculated from GAP land cover data at the macro level.

Habitat type	Percent coverage
Southeastern North American Ruderal Forest and Plantation	40.02
Recently Disturbed or Modified	24.29
Herbaceous Agricultural Vegetation	17.23
Southern Floodplain Hardwood Forest	11.13
Developed and Urban	4.50
Longleaf Pine and Sand Pine Woodland	2.26
Open Water	0.36
Southern Mixed Deciduous-Evergreen Broadleaf Forest	0.22

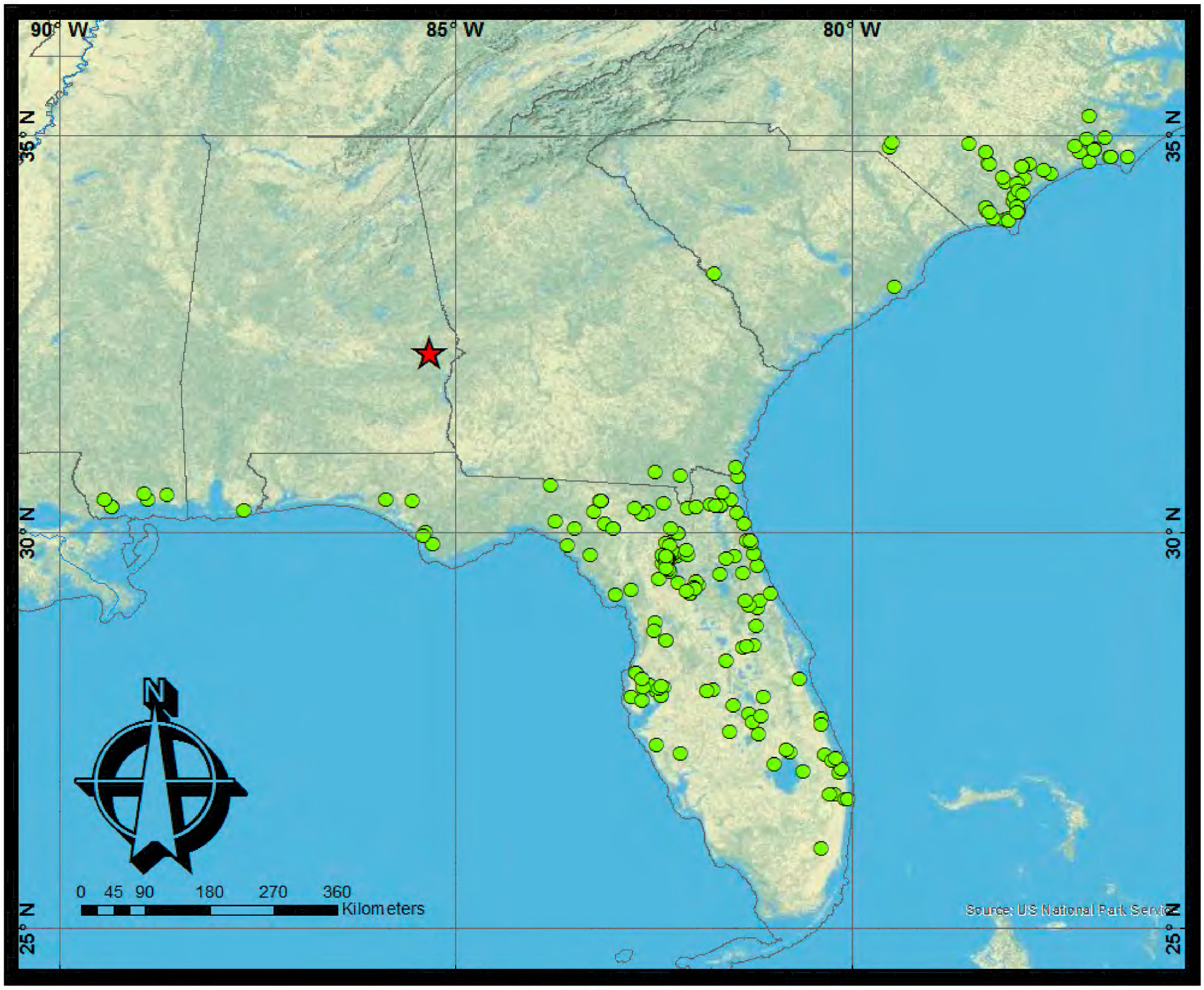

Figure 2. Map of known localities (green) of *Rhadinaea flavilata* showing the currently understood range of the species. The new distribution record reported here is displayed as a red star.

Resources. To objectively convey the type of habitat in which this individual was found, we quantified surrounding habitat using ESRI ArcGIS 10 Desktop (2011) and GAP land cover data (Homer et al. 2007) at the MACRO level within a buffer zone of 2 km (Table 1).

Rhadinaea flavilata is not easily confused with any other known local or regional snakes, and identification is simple; nonetheless, this animal had typical attributes of an adult of this species, with a stripe through the eye, 17 midbody scale rows, 132 ventral scales, 62 pairs of subcaudals and a divided anal plate. We include a post-mortem photograph of the animal before preservation in formalin as Figure 1.

We provide a map of our record as well as georeferenced localities of *Rhadinaea flavilata* from VertNet (Constable et al. 2010) in Figure 2 with a list of records used included in Appendix Table A1. This record is the second known occurrence of this species on the piedmont, and represents a new county record for Alabama, as this species has only been reported from the southern coastal counties of Baldwin, Mobile and Washington (Myers 1967; Conant and Collins 1991; Ernst and Ernst 2003). This record extends the range of the species ~200 km north of the closest known populations in panhandle Florida.

We found this snake on the road amidst pine plantation (Figure 3), a habitat type from which this species is well known. The disjunction in range reported here is large but not unprecedented, as an isolated, piedmont population was confirmed near Aiken, South Carolina, as recently as 1987 (Whiteman et al. 1995). Because of its secretive nature and the extent of pine plantation, it is possible this species exists in undiscovered, isolated populations across the southeastern United States. Natural history information, including the historical biogeography of this species is poorly known; these populations may be remnants from a past continuous distribution or introduced via anthropogenic activities such as logging. We recommend survey work to further establish the presence of a population in this region and

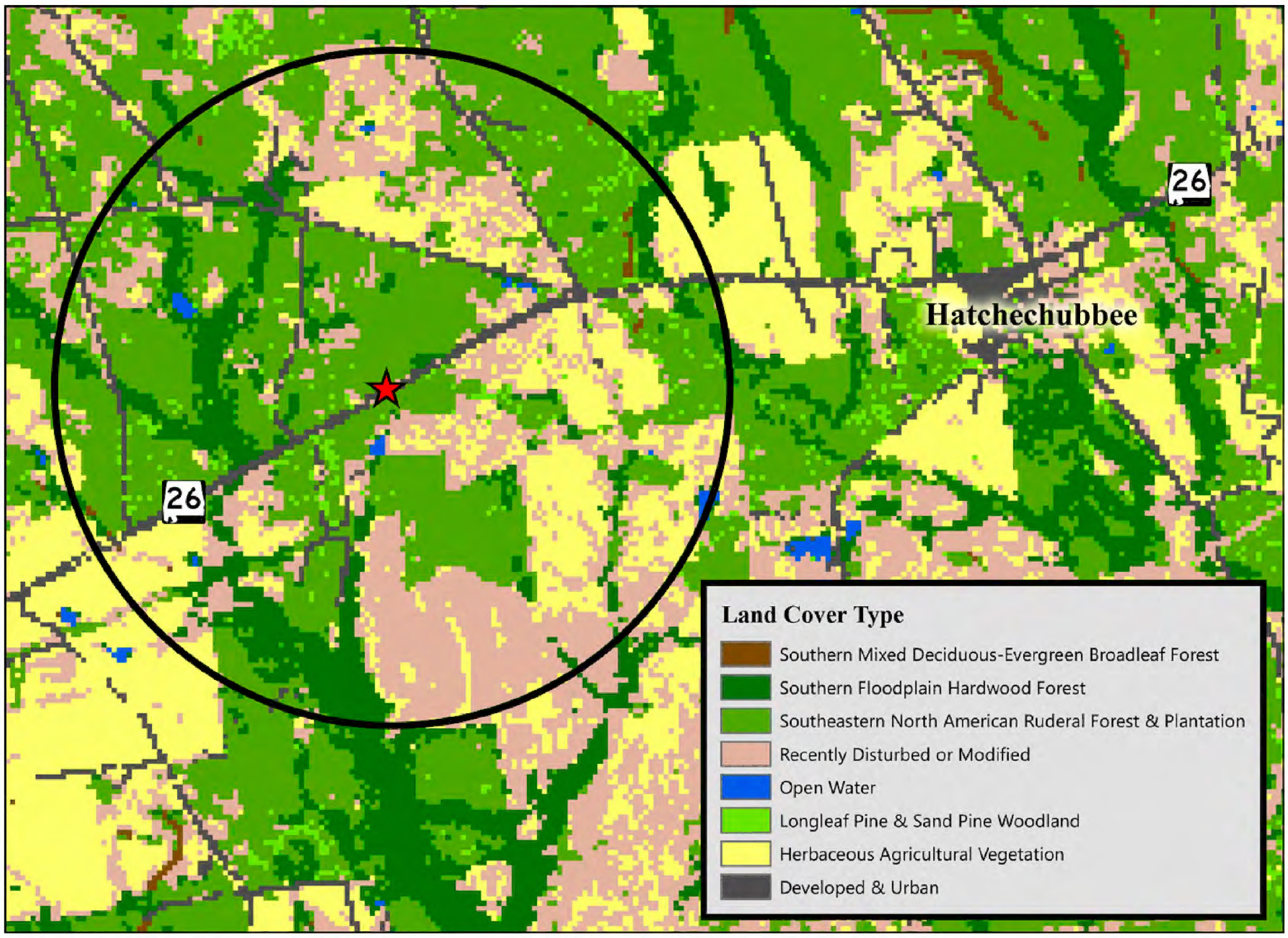

Figure 3. Fine scale floristic habitat map compiled from GAP land cover data. The specimen found is marked with a red star, and the 2 km radius buffer zone is marked with a black circle. Percent coverage of each type of habitat within the circle is described in Table 1.

other areas with suitable habitat, as previous ambiguous records for this species have been confirmed in this manner (Whiteman et al. 1995).

ACKNOWLEDGEMENTS

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APPENDIX

Table A1. List of known localities of *Rhadinaea flavilata* from VertNet. Institution abbreviations are on the VertNet website at http://portal.vertnet.org/publishers.

Institution code	Collection code	Catalog number	Country	State	County	Decimal latitude	Decimal longitude
CAS	SUR	8859	United States	North Carolina	Brunswick	34.397	–077.913
CAS	HERP	174261	United States	Florida	Flagler	29.561	–081.192
CAS	HERP	190369	United States	Florida	Hillsborough	27.933	–082.402
CAS	HERP	190370	United States	Florida	Hillsborough	27.933	–082.402
CAS	SUR	10126	United States	Florida	Marion	29.241	–082.088
CAS	SUR	10490	United States	Florida	Orange	28.546	–081.331
CAS	HERP	233361	United States	Florida	Pasco	28.212	–082.733
CAS	HERP	233362	United States	Florida	Pasco	28.212	–082.733
CAS	HERP	233363	United States	Florida	Pasco	28.212	–082.733
CAS	HERP	233364	United States	Florida	Pasco	28.212	–082.733
CAS	HERP	198634	United States	Florida	Pinellas	27.910	–082.787
CAS	HERP	198637	United States	Florida	Pinellas	27.865	–082.647
CAS	HERP	233351	United States	Florida	Pinellas	28.034	–082.640
CM	Herps	S9879	United States	Alabama	Baldwin	30.26	–087.68
CM	Herps	37765	United States	Florida	Duval	30.32	–081.65
CM	Herps	88694	United States	Florida	Highlands	27.47	–081.54
CM	Herps	69258	United States	Florida	Hillsborough	28.03	–082.38
CM	Herps	S9636	United States	Florida	Marion	29.21	–082.05
CM	Herps	S9637	United States	Florida	Marion	29.21	–082.05
CM	Herps	S9638	United States	Florida	Marion	29.21	–082.05
CM	Herps	S9639	United States	Florida	Marion	29.21	–082.05
CM	Herps	S9640	United States	Florida	Marion	29.21	–082.05
CM	Herps	S9642	United States	Florida	Marion	29.21	–082.05
CM	Herps	S9643	United States	Florida	Marion	29.21	–082.05
CM	Herps	S9644	United States	Florida	Marion	29.21	–082.05
CM	Herps	S9645	United States	Florida	Marion	29.21	–082.05
CM	Herps	S9646	United States	Florida	Marion	29.21	–082.05
CM	Herps	S9641	United States	Florida	Marion	29.21	–082.05
CM	Herps	21439	United States	Florida	Putnam	29.46	–081.66
CM	Herps	19869	United States	Georgia	Charlton	30.7	–082.16
CM	Herps	S8937	United States	Texas	Bosque	31.78	–097.58
CUMV	Reptile specimens	8565	United States	Florida	Alachua	29.652	–082.323
CUMV	Reptile specimens	12884	United States	Florida	Okeechobee	27.244	–080.830
CUMV	Reptile specimens	1867	United States	Mississippi	Harrison	30.401	–088.896
FHSM	HERP	7423	United States	Florida	Gulf	29.948	–085.418
FHSM	HERP	11714	United States	North Carolina	Craven	34.952	–077.031
FLMNH	143410	113047	United States	Florida	Alachua	29.688	–082.215
FLMNH	143415	113052	United States	Florida	Alachua	29.652	–082.287
FLMNH	143416	113053	United States	Florida	Alachua	29.644	–082.346
FLMNH	143417	113054	United States	Florida	Alachua	29.644	–082.346
FLMNH	143418	113055	United States	Florida	Alachua	29.682	–082.353
FLMNH	143419	113056	United States	Florida	Alachua	29.604	–082.391
FLMNH	143424	113061	United States	Florida	Alachua	29.855	–082.347
FLMNH	108519	147614	United States	Florida	Alachua	29.668	–082.336
FLMNH	116204	155392	United States	Florida	Alachua	29.524	–082.315
FLMNH	116205	155393	United States	Florida	Alachua	29.524	–082.315
FLMNH	133243	173069	United States	Florida	Alachua	29.695	–082.355
FLMNH	43009	44536	United States	Florida	Alachua	29.621	–082.340
FLMNH	44065	45592	United States	Florida	Alachua	29.651	–082.324
FLMNH	460	460	United States	Florida	Alachua	29.651	–082.324
FLMNH	620	620	United States	Florida	Alachua	29.651	–082.324
FLMNH	63680	65606	United States	Florida	Alachua	29.668	–082.378
FLMNH	63686	65612	United States	Florida	Alachua	29.491	–082.299
FLMNH	68897	71198	United States	Florida	Alachua	29.665	–082.354
FLMNH	5908	7278	United States	Florida	Alachua	29.651	–082.324

Continued

Table A1. *Continued.*

Institution code	Collection code	Catalog number	Country	State	County	Decimal latitude	Decimal longitude
FLMNH	6649	8021	United States	Florida	Alachua	29.734	–082.245
FLMNH	8527	10023	United States	Florida	Alachua	29.744	–082.277
FLMNH	143411	113048	United States	Florida	Alachua	29.651	–082.324
FLMNH	143412	113049	United States	Florida	Alachua	29.714	–082.099
FLMNH	143413	113050	United States	Florida	Alachua	29.636	–082.328
FLMNH	143414	113051	United States	Florida	Alachua	29.708	–082.067
FLMNH	143420	113057	United States	Florida	Alachua	29.525	–082.315
FLMNH	158595	128352	United States	Florida	Alachua	29.817	–082.301
FLMNH	161226	130983	United States	Florida	Alachua	29.706	–082.398
FLMNH	102482	141555	United States	Florida	Alachua	29.707	–082.393
FLMNH	102495	141568	United States	Florida	Alachua	29.661	–082.321
FLMNH	114114	153295	United States	Florida	Alachua	29.671	–082.348
FLMNH	20100	21621	United States	Florida	Alachua	29.662	–082.314
FLMNH	22404	23925	United States	Florida	Alachua	29.624	–082.347
FLMNH	2943	2977	United States	Florida	Alachua	29.657	–082.342
FLMNH	5717	7087	United States	Florida	Alachua	29.651	–082.324
FLMNH	7486	8860	United States	Florida	Alachua	29.651	–082.324
FLMNH	2706	2740	United States	Florida	Alachua	29.651	–082.324
FLMNH	39498	41025	United States	Florida	Alachua	29.651	–082.324
FLMNH	10476	11972	United States	Florida	Alachua	29.645	–082.350
FLMNH	17586	19084	United States	Florida	Alachua	29.645	–082.350
FLMNH	143421	113058	United States	Florida	Alachua	29.682	–082.353
FLMNH	143422	113059	United States	Florida	Alachua	29.644	–082.345
FLMNH	17384	18882	United States	Florida	Alachua	29.542	–082.352
FLMNH	35363	36890	United States	Florida	Alachua	29.682	–082.353
FLMNH	143423	113060	United States	Florida	Baker	30.291	–082.066
FLMNH	143431	113068	United States	Florida	Baker	30.360	–082.381
FLMNH	106602	145691	United States	Florida	Bay	30.385	–085.557
FLMNH	81275	84079	United States	Florida	Bay	30.402	–085.888
FLMNH	143426	113063	United States	Florida	Bradford	29.969	–082.189
FLMNH	143427	113064	United States	Florida	Bradford	29.969	–082.189
FLMNH	143428	113065	United States	Florida	Bradford	29.969	–082.189
FLMNH	143425	113062	United States	Florida	Bradford	29.761	–082.087
FLMNH	143429	113066	United States	Florida	Bradford	29.969	–082.189
FLMNH	86481	89309	United States	Florida	Brevard	28.140	–080.665
FLMNH	111950	151119	United States	Florida	Broward	26.000	–080.385
FLMNH	143459	113096	United States	Florida	Clay	30.240	–081.457
FLMNH	143430	113067	United States	Florida	Columbia	30.244	–082.571
FLMNH	132288	171911	United States	Florida	Columbia	30.219	–082.651
FLMNH	101728	140796	United States	Florida	Columbia	30.293	–082.736
FLMNH	143432	113069	United States	Florida	Dixie	29.701	–083.306
FLMNH	143434	113071	United States	Florida	Duval	30.321	–081.723
FLMNH	143435	113072	United States	Florida	Duval	30.4	–081.53
FLMNH	115994	155182	United States	Florida	Duval	30.484	–081.636
FLMNH	3237	3271	United States	Florida	Duval	30.326	–081.660
FLMNH	143433	113070	United States	Florida	Duval	30.302	–081.975
FLMNH	63227	65153	United States	Florida	Duval	30.336	–081.790
FLMNH	143436	113073	United States	Florida	Duval	30.321	–081.723
FLMNH	143437	113074	United States	Florida	Flagler	29.479	–081.368
FLMNH	7490	8864	United States	Florida	Glades	27.067	–080.978
FLMNH	88258	91091	United States	Florida	Gulf	29.832	–085.296
FLMNH	139772	109409	United States	Florida	Hernando	28.630	–082.352
FLMNH	114575	153757	United States	Florida	Hernando	28.630	–082.352
FLMNH	154491	124226	United States	Florida	Highlands	27.593	–081.254
FLMNH	169316	173154	United States	Florida	Highlands	27.448	–081.176
FLMNH	143438	113075	United States	Florida	Hillsborough	27.992	–082.469
FLMNH	111054	150184	United States	Florida	Hillsborough	28.070	–082.556
FLMNH	127634	167094	United States	Florida	Hillsborough	28.015	–082.442
FLMNH	65870	67807	United States	Florida	Hillsborough	28.055	–082.414
FLMNH	44158	45685	United States	Florida	Indian River	27.640	–080.392

Continued

Table A1. *Continued.*

Institution code	Collection code	Catalog number	Country	State	County	Decimal latitude	Decimal longitude
FLMNH	44159	45686	United States	Florida	Indian River	27.562	–080.383
FLMNH	66186	68123	United States	Florida	Jefferson	30.590	–083.804
FLMNH	143439	113076	United States	Florida	Lafayette	30.244	–083.251
FLMNH	143440	113077	United States	Florida	Lafayette	30.102	–083.116
FLMNH	13408	14904	United States	Florida	Levy	29.267	–082.788
FLMNH	111483	150651	United States	Florida	Levy	29.207	–082.979
FLMNH	143442	113079	United States	Florida	Madison	30.385	–083.173
FLMNH	143443	113080	United States	Florida	Madison	30.385	–083.173
FLMNH	143444	113081	United States	Florida	Madison	30.385	–083.173
FLMNH	143448	113085	United States	Florida	Madison	30.385	–083.173
FLMNH	143449	113086	United States	Florida	Madison	30.385	–083.173
FLMNH	143450	113087	United States	Florida	Madison	30.385	–083.173
FLMNH	143441	113078	United States	Florida	Madison	30.385	–083.173
FLMNH	143445	113082	United States	Florida	Madison	30.385	–083.173
FLMNH	143446	113083	United States	Florida	Madison	30.385	–083.173
FLMNH	143447	113084	United States	Florida	Madison	30.385	–083.173
FLMNH	143451	113088	United States	Florida	Madison	30.385	–083.173
FLMNH	143453	113090	United States	Florida	Madison	30.385	–083.175
FLMNH	143452	113089	United States	Florida	Madison	30.385	–083.173
FLMNH	8530	10026	United States	Florida	Marion	29.322	–081.944
FLMNH	8532	10028	United States	Florida	Marion	29.365	–081.967
FLMNH	2680	2714	United States	Florida	Marion	29.291	–082.001
FLMNH	2716	2750	United States	Florida	Marion	29.291	–082.001
FLMNH	6133	7504	United States	Florida	Marion	29.291	–082.001
FLMNH	143454	113091	United States	Florida	Marion	29.283	–081.981
FLMNH	112028	151199	United States	Florida	Martin	26.961	–080.165
FLMNH	114773	153955	United States	Florida	Martin	26.974	–080.613
FLMNH	75265	78067	United States	Florida	Martin	27.189	–080.338
FLMNH	86748	89580	United States	Florida	Martin	27.004	–080.138
FLMNH	92546	95379	United States	Florida	Martin	27.108	–080.247
FLMNH	81056	83860	United States	Florida	Martin	27.132	–080.212
FLMNH	112088	151259	United States	Florida	Orange	28.567	–081.233
FLMNH	116505	155695	United States	Florida	Osceola	27.909	–081.123
FLMNH	51173	52711	United States	Florida	Palm Beach	26.681	–080.217
FLMNH	77443	80245	United States	Florida	Palm Beach	26.628	–080.081
FLMNH	78830	81633	United States	Florida	Pinellas	28.139	–082.658
FLMNH	154411	124146	United States	Florida	Polk	27.696	–081.3
FLMNH	75973	78775	United States	Florida	Polk	27.669	–081.143
FLMNH	67982	69919	United States	Florida	Polk	27.807	–081.499
FLMNH	143457	113094	United States	Florida	Polk	27.990	–081.828
FLMNH	143455	113092	United States	Florida	Polk	28.004	–081.749
FLMNH	143456	113093	United States	Florida	Polk	27.990	–081.828
FLMNH	143458	113095	United States	Florida	Putnam	29.652	–081.595
FLMNH	143461	113098	United States	Florida	Sarasota	27.194	–082.170
FLMNH	151459	121144	United States	Florida	Sarasota	27.299	–082.464
FLMNH	8528	10024	United States	Florida	Seminole	28.801	–081.214
FLMNH	143460	113097	United States	Florida	St. Johns	29.685	–081.476
FLMNH	146495	116136	United States	Florida	St. Johns	29.715	–081.236
FLMNH	114577	153759	United States	Florida	St. Johns	29.879	–081.285
FLMNH	65988	67925	United States	Florida	St. Johns	29.890	–081.333
FLMNH	151636	121358	United States	Florida	St. Johns	30.096	–081.355
FLMNH	113551	152731	United States	Florida	St. Johns	29.855	–081.271
FLMNH	39895	41422	United States	Florida	St. Johns	29.882	–081.288
FLMNH	143462	113099	United States	Florida	Suwannee	30.037	–083.020
FLMNH	143464	113101	United States	Florida	Suwannee	30.037	–083.020
FLMNH	143463	113100	United States	Florida	Suwannee	30.037	–083.020
FLMNH	143465	113102	United States	Florida	Suwannee	30.037	–083.020
FLMNH	13407	14903	United States	Florida	Taylor	30.036	–083.500
FLMNH	77548	80350	United States	Florida	Taylor	30.123	–083.736
FLMNH	143466	113103	United States	Florida	Taylor	29.828	–083.588

Continued

Table A1. *Continued.*

Institution code	Collection code	Catalog number	Country	State	County	Decimal latitude	Decimal longitude
FLMNH	143467	113104	United States	Florida	Union	30.044	–082.281
FLMNH	8531	10027	United States	Florida	Volusia	29.027	–081.188
FLMNH	70802	73523	United States	Florida	Volusia	29.129	–081.165
FLMNH	8533	10029	United States	Florida	Volusia	29.071	–081.303
FLMNH	8534	10030	United States	Florida	Volusia	29.211	–081.023
FLMNH	10308	11804	United States	Florida	Volusia	29.120	–081.351
FLMNH	126053	165513	United States	Georgia	Camden	30.815	–081.470
KU	KUH	97889	United States	North Carolina	Carteret	34.723	–076.726
LACM	Herps	59098	United States	Florida	Okeechobee	27.208	–080.786
MCZ	Herp	R–069176	United States	Florida		30.696	–081.441
MCZ	Herp	R-175722	United States	Florida	Gulf	29.988	–085.382
MCZ	Herp	R–06978	United States	Florida	Orange	28.538	–081.377
MCZ	Herp	R–087329	United States	Georgia	Clinch	30.745	–082.478
MCZ	Herp	R-161187	United States	Mississippi	Jackson	30.457	–088.639
MCZ	Herp	R-140298	United States	North Carolina	Carteret	34.728	–076.516
MVZ	Amphibian and reptile specimens	53907	United States	Florida	Marion	29.291	–082.001
MVZ	Amphibian and reptile specimens	137557	United States	North Carolina	Brunswick	33.951	–078.019
MVZ	Amphibian and reptile specimens	164867	United States	North Carolina	Brunswick	33.921	–078.021
NCSM	NCSM-Herp	1032	United States	North Carolina	Brunswick	33.935	–078.066
NCSM	NCSM-Herp	10720	United States	North Carolina	Brunswick	33.958	–078.214
NCSM	NCSM-Herp	3906	United States	North Carolina	Brunswick	34.096	–078.306
NCSM	NCSM-Herp	734	United States	North Carolina	Brunswick	34.043	–078.299
NCSM	NCSM-Herp	3980	United States	North Carolina	Brunswick	34.096	–078.306
NCSM	NCSM-Herp	4040	United States	North Carolina	Brunswick	34.022	–078.268
NCSM	NCSM-Herp	10196	United States	North Carolina	Carteret	34.730	–076.729
NCSM	NCSM-Herp	10197	United States	North Carolina	Carteret	34.726	–076.754
NCSM	NCSM-Herp	1029	United States	North Carolina	Carteret	34.783	–077.120
NCSM	NCSM-Herp	1033	United States	North Carolina	Carteret	34.670	–077.001
NCSM	NCSM-Herp	10195	United States	North Carolina	Carteret	34.730	–076.729
NCSM	NCSM-Herp	10250	United States	North Carolina	Carteret	34.834	–076.945
NCSM	NCSM-Herp	11170	United States	North Carolina	Carteret	34.815	–076.94
NCSM	NCSM-Herp	11178	United States	North Carolina	Carteret	34.722	–076.726
NCSM	NCSM-Herp	61830	United States	North Carolina	Carteret	34.814	–076.940
NCSM	NCSM-Herp	61829	United States	North Carolina	Carteret	34.814	–076.940
NCSM	NCSM-Herp	4457	United States	North Carolina	Craven	35.244	–077.003
NCSM	NCSM-Herp	34719	United States	North Carolina	Dare	35.987	–075.664
NCSM	NCSM-Herp	28703	United States	North Carolina	Dare	35.978	–075.664
NCSM	NCSM-Herp	3409	United States	North Carolina	Dare	35.890	–075.661
NCSM	NCSM-Herp	9346	United States	North Carolina	Dare	35.999	–075.662
NCSM	NCSM-Herp	9347	United States	North Carolina	Dare	35.999	–075.662
NCSM	NCSM-Herp	28883	United States	North Carolina	Dare	35.978	–075.664
NCSM	NCSM-Herp	3255	United States	North Carolina	Dare	35.925	–075.702
NCSM	NCSM-Herp	1163	United States	North Carolina	Jones	34.863	–077.179
NCSM	NCSM-Herp	10562	United States	North Carolina	New Hanover	34.203	–077.950
NCSM	NCSM-Herp	10681	United States	North Carolina	New Hanover	34.188	–077.95
NCSM	NCSM-Herp	10806	United States	North Carolina	New Hanover	34.111	–077.922
NCSM	NCSM-Herp	10916	United States	North Carolina	New Hanover	34.227	–077.944
NCSM	NCSM-Herp	3211	United States	North Carolina	New Hanover	34.035	–077.894
NCSM	NCSM-Herp	3981	United States	North Carolina	New Hanover	34.056	–077.902
NCSM	NCSM-Herp	4074	United States	North Carolina	New Hanover	34.227	–077.944
NCSM	NCSM-Herp	964	United States	North Carolina	New Hanover	34.078	–077.922
NCSM	NCSM-Herp	1030	United States	North Carolina	New Hanover	34.154	–077.942
NCSM	NCSM-Herp	1031	United States	North Carolina	New Hanover	34.167	–077.958
NCSM	NCSM-Herp	10917	United States	North Carolina	New Hanover	34.227	–077.944
NCSM	NCSM-Herp	10240	United States	North Carolina	New Hanover	34.227	–077.944
NCSM	NCSM-Herp	10350	United States	North Carolina	New Hanover	34.227	–077.944
NCSM	NCSM-Herp	2672	United States	North Carolina	New Hanover	34.304	–077.894

Continued

Table A1. *Continued.*

Institution code	Collection code	Catalog number	Country	State	County	Decimal latitude	Decimal longitude
NCSM	NCSM-Herp	10807	United States	North Carolina	New Hanover	34.111	–077.922
NCSM	NCSM-Herp	10961	United States	North Carolina	New Hanover	34.111	–077.922
NCSM	NCSM-Herp	10962	United States	North Carolina	New Hanover	34.111	–077.922
NCSM	NCSM-Herp	80853	United States	North Carolina	New Hanover	34.261	–077.844
NCSM	NCSM-Herp	10745	United States	North Carolina	Onslow	34.509	–077.483
NCSM	NCSM-Herp	9370	United States	North Carolina	Onslow	34.563	–077.583
NCSM	NCSM-Herp	4080	United States	North Carolina	Pamlico	34.970	–076.807
NCSM	NCSM-Herp	11271	United States	North Carolina	Pender	34.411	–078.067
NCSM	NCSM-Herp	4495	United States	North Carolina	Pender	34.633	–077.765
NCSM	NCSM-Herp	9284	United States	North Carolina	Pender	34.605	–077.855
NCSM	NCSM-Herp	10034	United States	North Carolina	Pender	34.463	–078.101
NCSM	NCSM-Herp	10041	United States	North Carolina	Pender	34.451	–077.817
NCSM	NCSM-Herp	10233	United States	North Carolina	Pender	34.605	–077.851
NCSM	NCSM-Herp	10234	United States	North Carolina	Pender	34.605	–077.851
NCSM	NCSM-Herp	9283	United States	North Carolina	Pender	34.605	–077.855
NCSM	NCSM-Herp	10310	United States	North Carolina	Sampson	34.888	–078.522
NCSM	NCSM-Herp	11265	United States	North Carolina	Sampson	34.793	–078.311
NCSM	NCSM-Herp	11266	United States	North Carolina	Sampson	34.793	–078.311
NCSM	NCSM-Herp	61888	United States	North Carolina	Sampson	34.658	–078.276
NCSM	NCSM-Herp	10760	United States	North Carolina	Sampson	34.638	–078.270
NCSM	NCSM-Herp	11778	United States	North Carolina	Sampson	34.793	–078.310
NCSM	NCSM-Herp	60094	United States	North Carolina	Scotland	34.853	–079.524
NCSM	NCSM-Herp	42930	United States	North Carolina	Scotland	34.903	–079.498
NCSM	NCSM-Herp	27538	United States	South Carolina	Charleston	33.088	–079.461
Ohio State University - Reptile Division, Columbus, OH (OSUM)	Reptiles	OSUM Reptiles 1606	United States	Florida		28.751	–082.500
UF	UF/FGS	5725	United States	Florida	Citrus	28.86	–082.49
UF	UF/FGS	5796	United States	Florida	Levy	29.4	–082.44
UF	UF	5666	United States	Florida	Marion	29.36	–082.19
USNM	Amphibians & Reptiles	541737.653	United States	Florida	Orange	28.36	–081.594
USNM	Amphibians & Reptiles	24452.620	United States	Mississippi	Hancock	30.317	–089.349
USNM	Amphibians & Reptiles	24454.620	United States	Mississippi	Hancock	30.317	–089.349
USNM	Amphibians & Reptiles	24453.620	United States	Mississippi	Hancock	30.317	–089.349
USNM	Amphibians & Reptiles	56444.603	United States	Mississippi	Hancock	30.408	–089.438
USNM	Amphibians & Reptiles	56443.603	United States	Mississippi	Hancock	30.408	–089.438
USNM	Amphibians & Reptiles	125546.627	United States	Mississippi	Harrison	30.473	–088.938
USNM	Amphibians & Reptiles	523653.637	United States	North Carolina	New Hanover	34.022	–077.909
USNM	Amphibians & Reptiles	523654.637	United States	North Carolina	New Hanover	34.022	–077.909
USNM	Amphibians & Reptiles	278317.614	United States	South Carolina	Aiken	33.25	–081.742
YPM	VZ	YPM HERR 000075	United States	Florida	Palm Beach	26.616	–080.057
YPM	VZ	YPM HERR 000076	United States	Florida	Palm Beach	26.683	–080.28